



US009820999B2

(12) **United States Patent**  
**Tabuteau**

(10) **Patent No.:** **US 9,820,999 B2**

(45) **Date of Patent:** **\*Nov. 21, 2017**

(54) **NERIDRONIC ACID FOR TREATING  
COMPLEX REGIONAL PAIN SYNDROME**

(71) Applicant: **ANTECIP BIOVENTURES II LLC**,  
New York, NY (US)

(72) Inventor: **Herriot Tabuteau**, New York, NY (US)

(73) Assignee: **ANTECIP BIOVENTURES II LLC**,  
New York, NY (US)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-  
claimer.

(21) Appl. No.: **15/647,140**

(22) Filed: **Jul. 11, 2017**

(65) **Prior Publication Data**

US 2017/0304331 A1 Oct. 26, 2017

#### Related U.S. Application Data

(63) Continuation-in-part of application No. 15/357,932,  
filed on Nov. 21, 2016, now Pat. No. 9,707,245,  
which is a continuation-in-part of application No.  
14/530,556, filed on Oct. 31, 2014, which is a  
continuation-in-part of application No. 14/279,229,  
filed on May 15, 2014, now Pat. No. 9,034,889,  
(Continued)

(51) **Int. Cl.**

**A61K 31/663** (2006.01)  
**A61K 31/675** (2006.01)  
**A61K 9/20** (2006.01)  
**A61K 45/06** (2006.01)  
**A61K 47/12** (2006.01)  
**A61K 9/28** (2006.01)  
**A61K 9/00** (2006.01)

(52) **U.S. Cl.**

CPC ..... **A61K 31/675** (2013.01); **A61K 9/0053**  
(2013.01); **A61K 9/20** (2013.01); **A61K 9/2004**  
(2013.01); **A61K 9/28** (2013.01); **A61K 31/663**  
(2013.01); **A61K 45/06** (2013.01); **A61K 47/12**  
(2013.01)

(58) **Field of Classification Search**

CPC ..... **A61K 31/663**  
See application file for complete search history.

(56) **References Cited**

#### U.S. PATENT DOCUMENTS

4,939,130 A 7/1990 Jaeggi et al.  
5,869,471 A 2/1999 Hovancik et al.  
(Continued)

#### FOREIGN PATENT DOCUMENTS

CN 101259133 3/2008  
EP 1057488 12/2000  
(Continued)

#### OTHER PUBLICATIONS

Laslett et al., Zoledronic Acid Reduces Knee Pain and Bone Marrow  
Lesions over 1 Year: A Randomized Controlled Trial, *Annals of the*  
*Rheumatic Diseases*, 71(8), 1322-1328, Aug. 2012.

(Continued)

*Primary Examiner* — San Ming R Hui

(74) *Attorney, Agent, or Firm* — Maschoff Brennan  
Laycock Gilmore; Brent A. Johnson; Yuefen Zhou

(57) **ABSTRACT**

Osteoclast inhibitors, such as neridronic acid, in an acid or  
a salt form can be used to treat or alleviate pain or related  
conditions, such as complex regional pain syndrome.

**30 Claims, 17 Drawing Sheets**

